If the Southern slave-driving Senators could have but made up their minds to allow the Homestead bill to pass, what a comfort they might have afforded to many a struggling family among our Western pioneers who, at this moment, sadly need it! Surely, in the hardships and privations which these settlers undergo, they pay for their land five times over, without having to be obliged to pay for it ever again at the Land Office, and perhaps in order to do that, to put themselves in the hands of searers who, and not they, become by that process the owners of the land for which they have struggled and labored in vain. In this business of equatting on the public lands, there is a deal of delusion. The settlers are too apt to think that, having got a claim to a 160 acres of land, they have got a farm; whereas all they have got is a part of the raw material out of which, with labor and expeace, patient waiting and the investment of capital, a farm may be made. We give below a private letter, which describes the position we fear but too truly not of one family only but of many thousands that left the East four or five years ago under the delusive idea that a farm might be had in the fertile West merely by squatting upon it. This letter is written from Minnesota, and from the best part of the State, too. There are different ideas about what constitutes distress in the West, as some recent discussions in our columns have shown. We do not quote the letter below as going to show distress, nor even as tending to raise a suspicion that the whole West is not the perfect paradise which those who have land to sell there are apt to represent it, but merely as the account, confidentially given by an intelligent and hardworking emigrant from New-England, of his own position and experience and the estimate which he has formed of the condition of his neighbors. It may, perhaps, serve as a useful lesson to others who may be disposed to start as farmers in the West, as so many do, without any capital to start upon. But, to the letter:

"I am row, like Mr. Micawber, waiting for something to turn up, fully assured that, if something does not turn up seen, I must turn down or round. I have a farm simest-I only lack a little to it. Perhaps the United States Senate may take pity on me and vote the Homestead bill. In that core, I should get a title and have a farm in reality, but not the means to work it. It is now nearly five years since I left the East -tearing myself from home, relatives and friendshoping in a few years of patient industry to earn a ome for my family. I had my choice in claims in a circle of five miles, there being but two taken in town when I came; nor was my selection a bad one. The land around has since all been taken, and some of it changed hands two or three times. Farms in this place are, or rather were, valued at from two to three thousand dollars. Having selected my land, I commenced builting a log-house, where I passed the long, dreary Winter like a hermit, that I might comply with the very letter of the law, and be the better prepared to receive my wife and children in the Spring. Their arrival made me happy, for I hoped to be able, from the proceeds of my crop, at least to feed and clothe them respectably. One who has never experienced life in a new settlement can form no idea of the trials and hardships that must be encountered, even with all the aid that money can purchase; but to commence a farm with a large family of small children, without a team or other stock, or even the most common tools to work a farm with, it is a struggle for dear life. Such was my commencement. By paying my last \$50 toward a yoke of oxen, they trusted me for the remaining \$50. When the children came on, I bought two cows on credit, and, by fattening one and selling both calves and some hay, I paid the note and saved one of the cows. I have managed to get geventeen acres broke, which cost eight dollars the acre, beside clearing some of the woods without plowing; but we have had discouraging crops ever since we came here, taken as a whole, though the fault was no in the quality of the soil, but other accidental causes, such as crows, blackbirds, squirrels, hogs, unruly cat tle, &c. The last season, as a whole, was the best for a crop of any since we have been here, yet it is the hardest to get along, as the abundance has reduced the prices so much that the amount it will bring is less than that of smaller crops the previous years. We are scantily clothed and poorly fed. With the assistance of a well-furnished wardrobe when we came, and Margaret's skill in making over, we got along very well for a year or two; but she has made over and patched as long as the old clothes and patches lasted, and now the children are nearly out of clothes, and ragged withal. I bought a pair of shoes for each of them in September, but have been unable to get any since, and they are nearly all barefoot now. My log house, which I built for a temporary habitation, expecting to build a better one in two years at meet, we have lived in since, and may be obliged to it for shelter for some time to come. Before the last erep came in, we were without meat for five months. and without bread for days, with only the garden vegetables to live upon. Since my corn was ripe, we have lived principally on corn-meal food, with just pork enough to grease it, and a few potatoes for variety. Butter we have not seen for four months. Last Spring, I had a team sufficient to plow my land. My oren were taken from me last Fall because I could not pay \$109. in addition to \$45 that I paid when I gave my note. They have since been offered, I hear, for \$70 cash. Stock of all kinds is a third lower than it was. Mine consists of a pair of steers, about two thirds large enough to plow with, an old eow that goes dry four months in the year, a two year-old heifer, a sow only nine months old, a pair of pigs, and twenty-one hens. We cannot afford to eat our eggs, although they bring but eight cents per dozen. We have some twelve dozen saved up, and intend to try the market to-

"Times are as hard here as ever, and no prospect of their being any better for the present. There are a great many starting for Pike's Peak in search of gold, and many more would go if they could get away. Speculation has nearly ruined Minnesota for the present; but we are in hopes there will be something left of it after all. It has many real advantges, which will make it a great State sometime. The land specu-lation is about over; but farms are really worth as much as ever, and if there was capital enough to work them to advantage, money might be made here as well as in the older Western States. There are perhaps nineteaths of the people here mostly or quite as poor as myself, and that is poor enough. Each farmer might keep ateen or twenty head of cattle if he could get them, and cultivate from twenty-five to forty acres of crops if he had the land broke and a pair of horses to do the work. I have raised forty bushels of shelled corn on one was the past Summer, and my yield would no doubt have waraged that if the squirrels had not pulled up so much but after it came up, and I could bave bood or cultivates in reason. As it was, I only got 230 bushels from eight seres. We have the wild morning glery here, which is the worst weed I eve saw. It grows very fast, and keeps spronting from the root, and if not attended to in time slimbs the corn and winds round the stalk so tight that it girdles it and preverte its coming out. It is easily kept down if taken in season and plowed often. One of my neighbors cleared a field of ten acres this Summer by plowing four times both ways, and pulling round the hills wherever the plow did not reach. I think we can raise corn nearly as cheap here as they can in any part of the West if we could have horses to cultivate it in season. But the idea of raising corn by hand-hoeing for thirty cents the bushel is discouraging. My neighbor, who had a claim five months after mine, had \$7,000 to begin with. His crop tast Summer was 80

bushele of wheat, 100 of oats, 600 of cern, 500 of peta beer, six of bears and three of peas, from twenty-nine seres. He die the work with one pair of borses and an average of one man for six months. He kept six cows and fatted ten hoge and a yoke of onen, while my einteen seres, mortly cultivated by hard-hosing, and one cow and one pig, has not produced enough to faraish

our family with the necessaries of life. If the land does not come into warket this year, if the Homestead bill should pass, \$200 would put me on my feet, for I can change off my steers for one horse, and with the money buy another horse, a wagon, and a few things to relieve our most pressing wents, and I could, with a horse-team, do nearly all my farm-work alore, and sell wood enough in town next Winter to buy all that is needed for the family. I might, by preempting my claim, and mortgaging the land to some the Skylocks hereabouts, get the money by paying 36 per cent. per annum for it-\$144 a year for \$100. I dare not do it. I had better give half my claim for preempting the whole, sell the remaining half for what I can get, and go to Pike's Peak or the d- at once.

"We were very thankful for the paper sent with the letter, and should be very glad to have you send us papers occasionally, as I am unable to take one tois year. I have been a club subscriber to THE N. Y. TRIBUSE for two years, and I miss it very much. It seemed a kind of connecting link which bound us to the rest of the human family."

That is the climax of privation surely. To be reduced to corn bread and pork fat is hard; to see one's little children ragged and spoeless, is harder; but to be cut off from communication with the rest of the human family, to miss the weekly coming of THE TRIBUNE, is hardest of all. The picture of squatter life drawn above, without the slightest idea that it would ever find its way into print, is, we fear, too correct a resemblance, not of one case only, but of a very large number.

ENGLISH VIEWS OF AMERICAN PREACHERS.

From The London Press. Henry Ward Beecher is a remarkable, though some-what eccentric preacher. "The Plymouth Church," Brooklyn, is a sort of audience hall. There are about it very few of the usual and distinctive features of a place of Christian worship. In the vast pulpit, you will find on Sundays a respectable-looking person who writes notes, and looks about him, and makes himself singularly at home, before service begins. He weers neighbor of the depth and effective angles of the depth and the depth an the day. Be owes his power wholly to the depth and force and originality of his thoughts, the homely, and force and originality of his thoughts, the bornely, and yet neither volgar nor ungraceful, expression of them, and the honest but not pretentions faithfulness with which he inveighs against hypocrisy in every guise, and immorality in every rank. He regards every doctrine of the Bible not as a mere part of a theological system, dry and orthodox, but as bearing on man in some of the varied phases of his life. To have value, he holds that a doctrine must be vital.

These are the leading principles which give his preaching what such a course is sure to create—its just appreciation and great popularity. He repudiates, and most justly, every system which exhits the government of God above God Himself, ond substitutes laws for a living presence, and makes Deity sub-

tutes laws for a living prevence, and makes Deity sub-servient to them. The heart of human nature years for what will still its fevered beatings, and sooth its irritation, and satisfy its lorgings. A sound theology ought to be the porsession of the preacher, but it is a life-giving and life-sustaining preaching that must be the ministry of the pulpit. Carbon in the living tree is delightful and fruit-bearing. Carbon in the diamond is bright and precious, but cold and indigestible is bright and precious, but cold and indigestible. There is, too, something large and comprehensive in the sympathies of Mr. Beecher. His heart has out-

grown the restraints and trammels of party.

Mr. Beecher takes the sunny size of hie, and loves to dwell on all that feeds the happiness of the human heart. He will not pick up withered leaves if there be any green once. He see a to revel in a bright re ligious light. "When one's friends die, we should go to the grave, not singing mournful psalms, but scat-"tering flowers. Death was wrecked long ago. "Christians walk in black, and sprinkle the ground Christians walk in black, and sprinkle the ground with tears, then is the time when they should illuminate. As the disciples found the angels in Christic grave, so in the grave where any of his loved disciples lie are angels of consolation, if we would only

Beecher has been accused, as most faithful me have been accused of preaching politics. His views of the duties and responsibilities of the pulpit seem much more expanded than those of many of his cotem-

He is a man of a thoroughly practical mind. He seems to despise all trifling with great themes, all prettiness of speech, all "playing at preaching."

With him it is an carnest and fruitful work, and so selemnity of utterance is in his mind an apology for

dry and oull ermons.

Such outspoken preaching will, of course, give offerse. The mile of Manchester would be bornified.
The Stock Exchange would expel the peacher. But the preacher is right, notwithstanding. Some of his pithy remarks are fit to be household

worde:

"A belping word to one in trouble is like a switch on a railway track—but one inch between wreck and rule and amouth onrolling prospecity.

"Elevery is a state of suppressed war.

"A grindstone that say no grit in it, how long would it take to
make an ax sharp! Affairs that have no pinch in them, how long
would they take to make a man!

"A man who is in the right knows that he is in the majority,
for God is on his side."

Beecher is the preacher for the poople. His sermore are not heroe, vulgar, and vituperative declara-tion, without a scintillation of genius, however sin-cerely meant, such as are heard in the Surrey Musiccerety meant, such as are heard in the Surrey Musichall. They are pregnant with celestial fire, rich in suggestive and original thought. Here and there we find auggets of gold and geme of the first water. Yet he never less sight of the end of a sermon, which is to profit, or of the hearers of it who are ignorant, sinto pront, or of the hearers of it who are a donated to be and unhappy. He says quaint things, but I takes jokes from Joe Miller and christens them. clergy may copy and study his excellencies, and avoid

takes jokes from Joe Miller and christens them. Our clergy may copy and study his excellencies, and avoid his interspersed and sometimes provocative re narks. He is not a model, but he is better—he is capital, available capital, on which others may draw, and send what they draw into currency in thoughts and send what they draw into currency in thoughts and send what they draw into currency in thoughts and send what they draw into currency in thoughts and send what hill do the world a vast deal of good.

He is full of vigor; never dyspeptic in his divinity—as, in all likelihood, he never is in a humbler region. He has carried into manhood the freshness and the exuperant force of carlier days, and overflows, therefore, with sympathy and communion with all living and growing things. He says occasionsly an indiscreet thing, but rarely, if ever, a tame thing.

Another preacher, not so popular, perhaps, as Ward Beccher, but a vigorous thinker and an able speaker, is Theodore Ledyard Cuyler. He is picturesque and varied in his tyle, homely in his preferences, and altogether a useful and able exponent of his own school of teaching. He ranks with what are called in America "the Referming Preachers"—that is, the class who ally their influence to every good movement that touches and raises the down-trodden and depressed sections of society. There is in this a practical good everse which commends religion to those who are otherwise indisposed to listen to its claims.

This is what is wanted in our own country. We have too much theology and too little reliance in our

This is what is wanted in our own country. We have too much theology and too little reliance in our

This is what is wanted in our own country. We have too much theology and too little reliance in our pulpits—too much systems and dogmas, and their relative positions and superpositions in the Caristian system, and for too little of that homely, intelligent, and common sense use of those grand truths which shine with the spiender but also with the usefulness of stars, guiding the sailor on the trackless sea, and lessening the darkness of a moonless right.

Dr. Stoors, of Brocklyn, is another of those masculine American minds who, ignorant or disdainful of theological dilletantism, give themselves up to the greatest good of the greatest number. Dr. Storrs is anything but dull, tame or provaic. Nay, on subjects that rise above the every day relations of religion and touch the springs and fountains of truth, he is not only elequent, but powerful and rich and argumentative.

Beside these, there are numbers of vigorous minds in America whom we have no space to spare for discussing. They have all great faults; they indulge in modes of expression alien to our taste, and generally work at high pressure. Stil they are a powerful race, they do themselves and us credit. If our children are so healthy, what a noble mother must they have had!

CHARCOAL NOT ANTISEPTIC,-It is commonly believed, and it is stated in many chemical works, that charcoal is antiseptic. This, according to Dr. STER-HOUSE, is the very reverse of the fact, as shown by the condition of the bodies of animals which have been long buried in charcoal, which are usually in an advanced stage of decay. The opinion has doubtless arisen from the fact that charcoal absorbs the gasses, and thee prevents say disagreeable effluviaINSURANCE IN MASSACHUSETTS.

The laws of Massachusetts require minutely-detailed

prival statements of their affairs from all Insurance Companies doing business within that State; and no such company obertered elsewhere is allowed to do business publicly there, without first appointing and dury antherizing some citizer of that State as its general agent or attorney, "upon whom all lawful processes egainst the company may be served, in like manner as if the company had existed and been duly served with process in the Commonwealth. This egent or attorney is obliged to give bonds to the Treasurer to accept service of all lawful processes. By this arrangement, citizens of Massachusetts, insuring in companies out of that State, are not obliged to go out of the State to prosecute their claims. The foreign companies," as they designate all beyond their own limits, are also required to report annually,

the same as the domestic companies. The business of seeing to the execution of these laws, examining the affairs of the companies chartered in the State, and reporting to the Legislature is confided to two Insurance Commissioners, who are paid by the State an annual ralary of \$1 500 each. In addition to he above duties, they are required to make, or causa o be made, an anunal valuation of all the policies on ife outstanding on the 1st day of November of each verr, against the Life Insurance Companies doing business in the State, and by way of compensation for his service each Life Insurance Company is required o pay into the Treasury one cent for every thousand dollars icsured.

The Report of the Insurance Commissioners for the ear ending on the 1st of November, 1858, is a docment of 240 pages, creditably printed, and containing very full and generally satisfactory returns from one hundred and six y-five companies, of which one hundred and seventeen are chartered in the State. Of the latter five are Life Insurance Companies, and the rest are devoted to fire and marine insurance. The report gives the following summary comparison of the fire and marine business in the 112 Massachusette Comnames for the last two years:

In Stock Companies \$15 257,200 00 in Mutual Marine and Mutual 53,452,163 00 Fire and Marine. 49,640,113 60 \$132,854,841 42 201,733,847 03 \$347,580,662 45 \$468,079,773 45 Marine Loses. \$3,150,315 42 In Stock Companies. \$3,150,315 42 In Mutual Marine and Mutual Fire and Marine. 2,051,815 47 \$2,15J,\$26 90 2.127,570 81 \$4,340,697 71 Tetal Marine Loss \$5,202,628 89 6422,952 53 14,137 78 203,236 72 Total Fire Loss \$978,281 70 Total Loss, Fire and Marine ... \$6,181,510 59 \$645,327 63 \$4,966,021 74 This shows the very sensible net decrease of 19.34

per cent of marine loss, and 33.95 per cent of fire loss in favor of the last year, illustrating the great uncertainty of these branches of m surance.

The present report is remarkable for containing the result of the first valuation of life insurance policies made under the authority of the State. Previous to the last year the law required each Life Issurance Company doing business in the State to return the aggregate net value of its existing policies on the 1st of November; but as each company adopted its own rule of valuation, and some returned only rough or conjectural estimates, very little could be known as to the actual or comparative standing of the companies. By an act of 1858, the companies were required to farnish the Commissioners the date necessary for valuing each policy in force. They have accordingly returned the data of 42,502 policies, which the Commissioners have valued on what is termed the "Actuaries' Rate of Mortality," sesuming interest at 4 per cent. This value of the policies is in effect what, upon the aforesaid assumptions of mortality and interest, the comparies have not yet earned of the moneys paid them as premiums. Consequently, the ratio of actual assets to this and other liabilities will show their present standing. Deducting all other liabilities, inclu guarantee capital from the assets, and calling the balance the net assets, the Commissioners arrive, by their valuation, and the returns for the year, at the following synopeis of the standing of fourteen Life Insurance

A	Amount Insured. 5.13, 784 0.7 10.13, 785 0.7 10.13, 785 0.7 1.64, 7.3 0.6 2.746, 939 0.6 2.746, 939 0.6 2.746, 939 0.6 2.746, 939 0.6 2.746, 939 0.6 2.746, 939 0.6 2.746, 939 0.6 2.746, 939 0.6 2.746, 939 0.6 2.746, 939 0.6 2.747, 931 0.6 2.747, 931 0.6 2.747, 931 0.6 2.747, 931 0.6 2.747, 931 0.6 2.748, 541 0.6 4.93, 741 33	Amount Insured. 8.131,900 of 10,183,900 of 10,183,900 of 1,545,800 of 1,546,800 of 2,706,900 of 2,706,900 of 1,540,713 fo 1,540,713 fo 1,540,713 fo 1,540,713 fo 1,540,713 fo 1,540,713 fo 1,540,713,401 is 1,540	Net Assets, 'not believed by the Expense of the Expense for Policies, part year. Receipts. Receipts.	\$ 1,000,000 to 100 100 100 100 100 100 100 100 100 10	085 28 41,967,649 22 171 12 4560,631 61 451,023 11 9 11	4.58 48	552 901 559 155 611 117 72 500 589 555 44 606 92 14 62 80 80 80 80 80 80 80 80 80 80 80 80 80	56 \$11,444,922.20 129.41 \$5,712,567.73
	Add Service Bar Se	Add Service Bar Se	Present Net Value of Policies.	274 031 74,9 7 74,9 7 87,184	88 61,167,085	2,114,58 2,081,435 92,844 348,335	00 245 852 00 00 00 00 00 00 00 00 00 00 00 00 00	\$16,504,914

If the assumed mertality is sufficiently high and the seaumed rate of interest sufficiently low to represent the facts that are to be anticipated, the excess of cast ompanies' net assets over the net value of its policies s plainly what it has earned, or rather its surplus accumulation, which it may and must in justice divide among its members in proportion as they have contributed to produce it. It will be seen that these companies, while each has more or less surplus, differ very much in the relative amount of it. This is partly wing to their different distances from their times of declaring dividends. For example, the New-England Company soon after the 1st of November divided \$335 763 in cash, which reduced its assets to \$1,627. 331 70, and their ratio to the value of policies to 140 per cent. Toking into account this dividend the Massachusetts Companies in the aggregate have \$142 40 for each \$100 of their net liability to policy holders. The difference of surplus is also very much owing to the different ratio of expense to receipts, which is also shown in the comparison above.

Only two Life Companies doing business in Massa-chasetts, the American Matnal Life of New-Haves

the Commissioners with the required data for valusticn. The latter appears to have premised compliance, and its agencies are suspended till such time as a vaiuation a) all show it to be in good standing. The New-Haves Company, which has peremptorily declined to face such music, is pretty severely handled in the Report, to which, and to a responsive circular it has issued to its policy-solders in Massachusetts, we must refer our readers who wish to know more of its standing.

It appears from the Report that a considerable though hitherto unascertainable, part of the profits or sin of Life Insurance Companies has come from the forfeiture of life-policies by non-payment of promium due on a specified day. As this may arise from the misforture as well as the carelessness of insurers, the Commissioners contend earnestly that the Companies in their State shall be obliged by law, in regard to policies hereafter issued, in case of the non-payment of any premium, to continue the insurance during such time as they have been already paid for it by the net value of the policy at the time premium was due and not paid. In other words, the Company may be allowed to protect itself against any loss from the forfeiture of policies, but shall not derive any profit from that source. The propriety of Legislative interferet ce to this effort is argued in the Report at considerable length, and with a force that commends itself to the attention of all persons interested in Life Insurance. If the plan of registration and valuation of policies thus adopted by Massachusetts is carried out from year to year, it will be seen just how much gain each Company derives from the forfeiture of policies and just how important it is that the unfortunate and careless, or rather their dependents, should be protected by law from being sacrificed for the benefit of the punctual and lucky members. The Report sheds a good deal of light on the subject

of life insurance dividends, and the practice of the various offices in regard to them. As every Company, to be safe, must not presume on always realizing a high rate of interest on its investments, or securing the full average of vitality, or having always good luck, but charge premium which will be ufficient. Should interest fall, and the insured die faster than the prediction from the tables, it follows, of course, that with a high interest and an exper ence as good as the tables, a surplus must rapidly accumulate. This surplus is the subject of dividend. If it be retained too long, the earlier members are defranded to earlich the latter ones. If the Company on the other hand divides mere than it carne by insurance, the reverse takes place, and those who die get their insurance too cheap. There are two methods of avoiding an overplus of assets; one is to diminish the assets, by returning a portion of the premium paid, and the other to increase the liabilities by adding to the amount insured. Of the fourteen companies noticed by the Massachusetts Commission ere, fear make their dividends in whole or in part in this way. These companies and the reversionary dividends or additional sums thus insured by them are as follows:

State Mutual, Wornester \$24,180 86
 National, Vermont.
 16,144 24

 Manhavan, New-York.
 137,515 00

 Mutual Life, New York.
 3,111,354 69

Total.... On this the Commissioners remark: "Here is an aggregate of more than \$3,000,000 of insurance, for which the companies have been paid in full, every dollar of which is liable to be forfeited by the non "payment of premium on other insurance!" These are all mutual comparies, every policy holder being supposed to be as much a member and proprietor as another. They ought to know best whether it is perfectly prudent for them to stake so much moneymoney which belongs to those they are to leave behind them-on their strict punctuality. The additional insurance or "benne" is the reversion of a sum belonging to the insured in the hands of the company. Way should be consent to make the reversion contingent upon his being solvent and wide awake all his life !

SCIENCE, INDUSTRY AND INVENTION. WHY BOILERS EXPLODE .- The horror of an explo ion of the boiler was coeval with the invention of the steam ergine. Savery's pumping engine for draining ceal mines, first brought into use a century and a half ago, was used extensively for raising water for the country residences of the English nobility. But when applied to clearing deep mines or supplying towns with water, by raising it into an elevated reservoir, the boilers were invariably burst. To him succeeded Newcomen and Cawley, to whom belong the honor of baving permanently cetablished the employment of steam as a mechanical agent. Savery neither employed nor thought of the piston, and was forced to place his engine at the bottom of the mine. Newcomen and Cawley introduced the piston which Papin had unfortunately rejected, and placed their engine above ground at the mouth of the shaft. They employed steam at such low pressure that the danger of explosion was materially lessened, yet their engines required the constant attention of an attendant to open and close the cecks. A boy, employed in this service, stimelated by the love of play, added the first improvement by attaching cords to the levers by which the cocks were turned, and connecting the other ends of the cords to the moving beam, thus rendering the machine self-acting, and acquiring opportunities for joining his companione unknown to his employers. Savery provided no safety-valve, vet he roundly asserted that his machines rould work without injury for years unless they were purposely destroyed. The miners, how ever, refused to work them, or to remain in their vicinity, so great were their apprehensions of an explosion. Modern science has greatly lessened the frequency of these terrific accidents, and long use has effectually removed all apprehension of danger. Explosions, however, occur, all the world over. Science has, apparently, long since satisfied itself as to the cause of these explosions; and assuming the supposed cause to be the true one, has directed its preventive ingenuity in a uniform direction. Still, wish all this preventive care, enforced by stringent legal penalties, the havon of life and property goes on. Juries of inquest are called in factories, on railroads, and in steamboats, to give a satisfactory solution as to why the frightful havee around them occurred. The fact is most remarkable, in connection with these inquiries, that juries, under circumstances almost precisely identical, are continually rendering the most conflicting verdicts. Death has suddenly taken away the only competent witness in the person of the engineer, leaving all to corjecture. The subject has exhausted the ingenuity of the most scientific minds, and the records of the Patent-Offices throughout the world are crowded with inventions to prevent these explosions. Yet we are still at fault. It is well known that a boder which has safely and for a long period of time, carried a pressure of a hundred and twenty pounds, has at last been shattered into atoms under a pressure of only a hundred pounds. In other cases, some of which the reader must remember as having occurred within his own knowledge, boilers have been rent from their foundstions and scattered in fragments, when the proof was undoubted that the gauge-cock had shown, only a moment before the explosion, that the boiler was abundantly supplied with water. All the endless variety of safety-valves and other ingenious contrivances hav ing failed, and the proof being clear that boilers do explode, even when fully supplied not only with waer, but with every other precautionary device, it would seem that a mere deficiency of water is not the true cause of an explosion. It is at least believed, in

explanation of the difficulty, that the true agent is

this terrific destruction is to be found in the presence

of some power within the boiler, evolved by or in

combination with the steam, yet maintaining a sepa-

rate identity, with an everpowering energy, liable to

Some years sye, a most ingenious citizen of Palle-

Electricity.

be exerted at any moment, and against whose destructive consequences some new guards must be interposed, since all the old ones have notoriously proved them selves fallacious. This agent is new believed to be

and the International of London, have failed to famish | delphia, new deceased, Mr. Richard L. Lloyd, had his attention strengly directed to the solution of this great problem. He instituted a long peries of experiments with boilers, some of which were extremely hazardens. The result of these experiments satisfied him that the decomposition of water or steam within a boiler was accompanied by the formation of an explogive gas. Science had already detected the presence of a gas, but dexied that it was explicive unless combined with air from without. As no air could be admitted within the boiler, it was therefore considered an impossibility to explode it. Such was the opinion of experienced men in the highest walks of science, with whom Mr. Lloyd conferred. His own opinion was directly contrary, and he persevered in his efforts to solve the problem, finally making up his mind that the mysterious cause of all the hitherto unexplained explosions must be electricity. Re applied he crowning test of the correctness of his theory, by introducing an insulated metallic red through the top of a iler partly filled with water. The water was then wholly evaporated under a heavy present e, and the fire continued until that part of the boiler exposed to it became red hot; and if water were now to bepumped nto this red het beiler, all the conditions would be fulfilled, which scientific men, engineers and coroner's juries have always considered not only as necessary o cause an explosion but as causing one neavoidably. Lleyd, undismayed by the prospect, and firm in his convictions as Tycho Brabe or Columbus, with his own bands courageously pumped in sufficient water to cover the whole red-hot surface of the boiler! No explosion followed. He repeated the experiment with the same result, and confident that he had ducevered the important secret, indulged in the most exalisat anticipations of fame and fortune. But he met the undeserved fate of numerous other benefactors of his race. His great discovery was utterly neglected, be was ridiculed as an enthusiast, and shortly afterward died, his death basiened, as is believed, by the unexpected reverse to which his enthusiastic appreciation of his discovery had been subjected. His family sought in vain for others to do justice to his memory

by prosecuting the subject. But none could be found

courageous or credulous enough to undertake the

hazard of testing the verity of so dangerous an en-

But the memory of a fact so remarkable as that which he had demonstrated, was happily destined not to perish. Another citizen of Philadelphia, Mr. George T. Parry, hearing of poor Lloyd's experiments, deter mined to investigate the subject and repeat them for himself. For some three years Mr. Parry has been patiently going over the whole field of inquiry and trial much of the time at great expense, and often with great apparent danger to his life. He first began with small iron vessels, whose interior he found soon became coated or lined with a substance which a chemical analysis showed to be a non-conductor of electricity, and identical with that which is found in all boilers that have been long in use. He argued that if a boiler became lined with this non-conducting material, it was in reality a huge Leyden jar, filled with electricity and ripe for explosion, seeing that electricity is freely generated by boiling water. He accordingly applied the insulated conductor as used by L'oyd, inserting it through the top of the boiler, so as to discharge the electricity into the atmosphere as rapidly as it might be generated. The boiler thus treated was an old one, had been in use several years, and was not deemed safe with a greater pressure than 60 pounds. It was 12 feet long by 24' in diameter. The afety-valve was weighted at 68 pounds, and the fire surface was covered with water. He evaporated all the water at the full pressure of 68 pounds, and then, imitating the example of Lloyd, he continued the fire until the bottom of the boiler tecame red hot throughout its whole length. To verify this important fact, he called up five men to witness it. By all previous rule, the boiler was now certain to explode. Yet Mr. Parry courageously pumped thirty gallons of cold water into his red het boiler. Yet no explosion followed, and the only harm done to the old boiler was a few leaks at some of the rivets, caused by the sudden expansion and contraction to which the metal had been subected. No regular engineer could be found with nerve enough to sesist at this trial. Mr. Parry was com-

pelled to go through the experiment alone. The belief is universal that all steamboat or factory boilers, if tried by the simple test of pumping water ato them while red-hot, must inevitably explode. But here are two boilers to which the dangerous test of red heat and cold water had been applied, with the simple addition of an electrical conductor, and yet they escaped the fate which happens to all other builers without conductors. If the facts are correctly represented to us, they go far to prove that Messrs. Lloyd and Parry have discovered and perfected a preventive of misery and death as great and providential as the discovery of vaccination. But Mr. Parry has not been satisfied with testing the fact that it is the electricity within a holler which causes an explosion. He has sought, and is still seeking, to discover from what mysterious outside source proceeds the fatal spark which ignites the imprisoned moneter of destruction. Yet he supposes that the inside non-conducting coating or lining may contain a hole or fiesure, and that through this the positive electricity of the boiler, seekirg an equilibrium by contact with the negative out sife, thus generates the spark. He likens the vaporcus cloud in the boiler to the thunder-cloud of a Sun mer day, waiting for the proper moment to let fly its boit with violence proportionate to the negative condition of whatever may receive the charge. His issulated rod be thinks maintains an electrical equilib rium between the inside and outside of the boiler, and that it must consequently be at all times a reliable preventive of explosione. Touching this question, a cinularly encouraging experiment was made in Philalelphia seme years ago. A small quantity of water was put into a nine-men bombehell, which was then closed up hermetically. Two wires, one positive the other negative, led into the center of the shell, which being placed in a fire, was made red-hot. The water was converted into steam, yet no explosion took place An electrical battery was then charged and a spark communicated to the wire, when the shell instantly exploded with a terrific crash. It was evident that in he case no supply of fresh air could have been introduced into the interior of the shell. Tae ex periment rendered certain that which, even with scienfic men, had only been an admission, that the gas generated within a boiler was explosive. It proved, noreover, that a red heat would not explode it, bu hat a spark or flame was necessary to co so.

It is asserted that Mr Parry has introduced metal enductors into numerous boilers in Philadelphia, and that no explosion has been known to occur where they were in use. It is said, moreover, by a recent Pulla-lelphia journal, that since the fact of Mr. Parry's spolication of them has been publicly announced very large number of owners of engine are having them introduced into their boilers as matter of precaution. No mention is made of the orductor, or at least of its application to steam boilers, having been patented. As we have seen it repeserted the inventor Lloyd, died without securing the benefit of his invention. Yet if his successor Parry, has succeeded in reviving its forgotten value and in introducing it to public appreciation, some su stantial honor, beyond a passing newspaper article is ur questionably due to the man who may thus become the means of saving countless lives and a world of hor rible agony.

TEST FOR COD LIVER OIL .- Salphuric soid appears o be a perfectly reliable test of the excellency of co liver oil. The lilac hue produced by this acid is different from all other colors. Place a small quantity of he oil to be examined on a white plate, or clean writing paper; drop two or three drope of the sulphuric seid into the center, and instantly a number of radiating currents of a delicate and beautiful blac hue are een. The goodness of the oil is in proportion to the richress and persistency of this color, and the rapidity with which it is produced. The color produced in all other oile, as is seal oil, train oil, sperm oil, and in Russia, I in 49,000.

vegetable oils, is entirely free from a purple or viele; HEALTH AND DISEASE.

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INCISIONS UNDER ELECTRICITY .- The London Medical Times states that recently Mr. MARSHALL, of the University College Hospital, foliowing out the princip es now so widely discussed, of tooth extraction unfer the influence of electricity, has made some interesting observations with the view of teeing the powers of the electric current to modify the sensibility of parts operated on by the knife. The operations, nine in number, performed under its influence, include the incising of abscesses and carbanche, the removal of increased bone, sud also of a fatty tumor of occasiderable size. The peneral effect has been to modify the pain of ordinary incisions, rendering the suffering less scate. In one cas-twise flect was very striking. One me occasions, however, the part wer aggravated, apparently owing to the strength of the current employed. Perfect insensibility was never produced, and the resuits claim notice as those of early trial only. The coil apparatus was used, one pole being connected with the knife employed, and the other placed either on the patient's new or in his hard-the current becourse, is to mitting. Those results, whether ng, of egarded as decisive or not, are unquestionably of much importance.

MALIGNANT PUSTULE .- "Rankin's Abstract," gives the following new and important idea, in relation to the causes of malignant pustule, as stated in ' Researches on the Malignant Pustule of Man and Auimale" by Dr. K. Vinchow, a German physician. Tae author has ascertained, by experiment, tout this discase may be propagated by inoculating, not only with the matter of a pustule, but also with the blood of the diseased body, and that the time which elapses between the inoculation and death varies between formyfour and sixty six hours, with one exception, in which the time was thirty one hours. He has also investigated with much care the character of the bleed, and found that the white corpuscles are present in greater numbers, with some vibriones. These latter bodies were met with in the living blood, and somequently they are not to be regarded as the products of decomposition.

Causes or Insanity .- The annual report of the Penesylvania State Lunatic Hospital says, that out of .049 cases since the institution went into operation, only 502 have any recognized occasion. Of them, 105 have been from ill health: 137 from domestic trouble, 84 of these being females; religious excitement of all kinds, including Millerism and spiritual rappings, 11; intemperance 27; and opium-eating, mornified pride pelitics, loss of money, with other excesses and immorali ica, foot up about 55 more. There are over 400 single or widowed men insane to 219 married. With females, however, there are about as many married as single and widowed who are out of their minds. As to the previous occupations of those who have become insane, though farmers and laborers might be expected to furnish less than the average proportion, still, by taking in the weavers, the proportion is about kept up.
Private asylums, no doubt, take off a large proportion of the insane belonging to the wealthier and more intellectual classes. Still, there are, or have been, about twice as many students in the hospitals as there ought to be, according simply to the proportion of their numbers. The merchants, from the exciting nature of business, furnish more than the proper proportion, very considerably. Thus, out of 13,000 merchants, 22 have been in the hospital, while out of 21,000 carpenters but 12 have been there.

ADULTERATION OF FOOD IN FRANCE.-The adulteration of articles of food is made a grave offense in France, the penalties being fine, imprisonment, and the publication of the sentence upon public placards. The latter penalty is most dreaded of all, as it strikes a blow at the business of the person convicted. A recent number of the Paris Gazette de Tribunaus contains the sentences pronounced by the correctional tribunal, at the instance of the public prosecutor, against a large number of shopkeepers and milkmes, found guilty of adulteration. Some of these sentences are quite heavy. One milkman, who had been convicted for the fourth time on a charge of "faleifying alimentary substances," was sectenced to eight morths' imprisonment and three thousand france fine; another, convicted for the third time, to six mentas in prisonment and two thousand frances fine. They were also doomed to have six placards of the judgment posted up. A milkwoman, for the falsification of milk by adding thirty per cent. of water, was sentenced to three months' imprisonment and fifty france fine. Au-other, for milk falsified by the subtraction of cream, six days' imprisonment and fifty france fine; a wine merchant, for wine falsified by the addition of water, six days' imprisonment and fifty france fine; and the with chicory.

ALLOPATHY AND HOMEOPATHY IN COURT .- A CO. rious libel suit has recently come off in Paris. Twelve homeopathic physicians sued the Union Medicale for having asserted that homeopa by was " neither a doctrine, nor a science, but a trade," and that " if an epoch had ever presented itself at which the method of HAHNEMAN could be employed by any one who was not abjectly ignorant-a crack brained visionary, or a wretched charlatan-it was certainly not the present one. The editors and proprietors of the Union Medicale pleaded by way of defense and justification, that what they had stated was only the truth. The tribunal before which the suit was brought, without passing any judgment on the respective systems of allopathy and nomeopathy, held that the plaintiffs had no ground of action, and dismissed the case with costs.

INSTRUMENT FOR MEASURING OZONE.-Dr. LAS-KESTER, F.R.S., an eminent Boglish physician, has invented an instrument for measuring the varying intensity of ozone. This instrument consists of two small rollers included in a box, and which are moved by ordinary clockwork. Over the roller a strip of paper, prepared with iodide of potassium and staroh. is allowed to revolve, the paper becoming exposed to the air for an inch of its surface in the lid of the box. Twenty-four inches of paper pass over the rollers in the course of twenty-four hours, and thus registers, by its color, the intensity of the action of oxone in the atmosphere. By this instrument, the intensity of the ezone for every hour in the twenty four can be registered, and minima and maxima with an average to be assertained. The register of ozone can also be compared with those of the anemometer, and the relation of oxone to the direction and force of the wind be as certained. Dr. LANKESTER, in describing his instrument, points out the importance of ascertaining the presence of ozone, on account of its undoubted relation tohealth. He has also drawn attention to a series of tables drawn up from the registrations of the anemometer made at London, Blackbeath and Felixstow, on the coast of Suffolk. From these it was seen that the relation of these three places was as 0.22. and 55. The instrument acted also as a clock, and the time could be marked with perfect accuracy upon the Surgree IN Onto .- The statistics of Obio for 1858,

show that the number of suicides in that State was sixty in all, or one in every forty thousand of the population. The mode of suicide is mainly confine harging, drewning, cutting throat, shooting, and poison. Of the suicides in Ohio, the mode selected by seventeen was that of hanging, seven by drowning, six by cutting the throat, and ten by poisoning; the remaining modes were generally some violence, occasioned by delirium tremens or intoxication. The suieides in cities appear, as a general fact to be much more numerous than in the country, as for examplein New-York, 1 in 10,500; in Cincinnati, 1 in 15,000; in Lordon, 1 in 5,000; in Paris, 1 in 2,100. The number of suicides given for Europe, by Balbi, some twenty years since, was as follows: in Prance, I in 20,000; in Austria, 1 in 29,000; in Prussia, 1 in 15,000;